



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Title: Tri Valve for Backflow Preventer Assembly
Examiner: Stephen M. Hepperle
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LISTING OF CLAIMS

1. Canceled.

2. (Previously presented) A tri valve backflow prevention apparatus for use with a temporary conventional backflow prevention assembly between existing water main pipe and water main pipe under construction, and which permits activation of the water main pipe under construction and removal of the conventional temporary backflow prevention assembly without water in the water main pipe under construction being drained after its required pressure and bacterial testing is successfully completed, and also without the wasteful practice of additional water being needed to flush and refill the emptied water main pipe under construction, and without exposure of the emptied water main pipe under construction to contamination on the construction site and the need for flushing the emptied water main pipe with good drinking water to remove such potential contamination, said tri valve backflow prevention apparatus comprising:

a tri valve housing with a main valve body and two side valves, said main valve body configured for connection between existing water main pipe and water main pipe under construction, and both of said side valves configured for connection to a temporary backflow prevention assembly; and

1 easily accessible means for opening and closing said main valve and each of said side
2 valves so that during water main construction said main valve body remains closed and said two
3 side valves are allowed to remain open to provide water needed at the construction site via said
4 temporary backflow prevention assembly, and when all construction and testing is completed,
5 said easily accessible opening and closing means are used to close said two side valves and
6 thereafter open said main valve for immediate activation of water main pipe for drinking water
7 delivery to the public and removal of the temporary backflow prevention assembly without
8 causing any water to be drained from the water main pipe under construction.

9 3. (Previously presented) The apparatus of claim 2 wherein said main valve body and
10 said side valves each have valve bodies made from ductile iron encapsulated with EPDM rubber.

11 4. (Previously presented) The apparatus of claim 2 wherein said easily accessible means
12 for opening and closing said main valve and each of said side valves comprises a top seated
13 operating nut and wherein each of said valve bodies further comprises a plurality of nuts and
14 bolts, at least one O-rings, at least one rubber gasket, a valve adjusting stem, and a valve wedge
15 gate.

16 5. (Previously presented) The apparatus of claim 4 wherein said nuts and bolts are made
17 from steel.

18 6. (Previously presented) The apparatus of claim 4 wherein said operating nuts are made
19 from ductile iron.

20 7. (Previously presented) The apparatus of claim 4 wherein said O-rings are made of
21 nitrile rubber.

22 8. (Previously presented) The apparatus of claim 4 wherein said rubber gaskets are made

1 of nitrile rubber.

2 9. (Previously presented) The apparatus of claim 4 wherein said valve adjusting stems
3 are made of manganese bronze.

4 10. (Previously presented) The apparatus of claim 4 wherein said valve wedge gates are
5 made of ductile iron encapsulated with EPDM rubber.

6 11. (Previously presented) The apparatus of claim 4 wherein said nuts and bolts are made
7 from steel, said operating nuts are made from ductile iron, said O-rings are made from nitrile
8 rubber, said rubber gaskets are made from nitrile rubber, said valve adjusting stems are made
9 from manganese bronze, and said valve wedge gates are made of ductile iron encapsulated with
10 EPDM rubber.

11 12. (Previously presented) A method of protecting existing water main pipe and public
12 drinking water during water main construction that allows for connection of water main pipe
13 under construction to existing water main pipe and immediate delivery of good drinking water to
14 the public after construction is complete subsequent to the successful completion of applicable
15 pressure and bacterial testing of the water main pipe under construction without it being drained
16 of water and exposed to possible bacterial contamination during the removal of a temporary
17 backflow prevention assembly used with it during the construction process, said method
18 comprising the steps of:

19 providing a tri valve backflow prevention apparatus with a main valve body and two side
20 valves, said main valve body configured for connection between existing water main pipe and
21 water main pipe under construction, and both of said side valves configured for connection to a
22 temporary backflow prevention assembly, easily accessible means for opening and closing said

1 main valve and each of said side valves, a temporary backflow preventer assembly, existing
2 water main pipe, water main pipe under construction, and pressure and bacterial testing
3 equipment;

4 connecting said main valve of tri valve backflow prevention apparatus between said
5 existing water main pipe and said water main pipe under construction;

6 connecting said temporary backflow prevention assembly to said side valves of said
7 apparatus;

8 using said opening and closing means to open said side valves and close said main valve
9 body during water main construction;

10 after said water main construction is complete, using said pressure and bacterial testing
11 equipment to test said water main pipe under construction;

12 after said pressure and bacterial testing are successfully completed according to
13 applicable standards, using said opening and closing means to close said side valves;

14 using said opening and closing means to open said main valve body to activate said water
15 main pipe under construction for drinking water delivery to the public; and

16 removing said temporary backflow prevention assembly without causing any water to be
17 emptied from said water main pipe under construction, and also without the wasteful practice of
18 additional water being needed to flush and refill said water main pipe under construction after
19 being emptied, and without exposure of the emptied water main pipe under construction to
20 contamination on the construction site and the need for flushing said emptied water main pipe
21 with good drinking water to remove such potential contamination

22 13. (Previously presented) The method of claim 12 wherein the order of accomplishing

1 said steps of using said opening and closing means to open said main valve body to activate said
2 water main pipe under construction and removing said temporary backflow prevention assembly
3 is reversible.

4 14. (Previously presented) The method of claim 12 wherein said main valve body and
5 said side valves each have valve bodies made from ductile iron encapsulated with EPDM rubber.

6 15. (Currently amended) The method of claim 12 wherein said backflow ~~prevented~~
7 preventer comprises a plurality of nuts and bolts, an operating nut, a plurality of O-rings, a
8 plurality of rubber gaskets, a valve adjusting stem, and a plurality of valve wedge gates.

9 16. (Previously presented New) The method of claim 15 wherein said nuts and bolts are
10 made from steel.

11 17. (Previously presented) The method of claim 15 wherein said operating nuts are made
12 from ductile iron.

13 18. (Previously presented) The method of claim 15 wherein said O-rings and rubber
14 gaskets are made of nitrile rubber.

15 19. (Previously presented) The method of claim 15 wherein said valve adjusting stems
16 are made of manganese bronze.

17 20. (Previously presented) The method of claim 15 wherein said valve wedge gates are
18 made of ductile iron encapsulated with EPDM rubber.

19 21. (Previously presented) The method of claim 12 further comprising a step of
20 providing plugging means adapted to seal said side valves, and a step of using said plugging
21 means to plug said side valves after said step of removing said temporary backflow prevention
22 assembly.